City of Atlanta General Employees' Pension Fund

Actuarial Valuation and Review as of July 1, 2022

This report has been prepared at the request of the Board of Trustees to assist in administering the Pension Fund. This valuation report may not otherwise be copied or reproduced in any form without the consent of the Board of Trustees and may only be provided to other parties in its entirety, unless expressly authorized by Segal. The measurements shown in this actuarial valuation may not be applicable for other purposes.

Segal

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June 16, 2023

Board Members
City of Atlanta General Employees' Pension Fund
Atlanta, Georgia

Dear Board Members:

We are pleased to submit this Actuarial Valuation and Review as of July 1, 2022. It summarizes the actuarial data used in the valuation, analyzes the preceding year's experience, and establishes the funding requirements for fiscal year ending June 30, 2024.

This report was prepared in accordance with generally accepted actuarial principles and practices at the request of the Board to assist in administering the Pension Fund. The census information on which our calculations were based was prepared by Strategic Benefits Advisors and the financial information was provided by Mauldin & Jenkins. That assistance is gratefully acknowledged.

Segal does not audit the data provided. The accuracy and comprehensiveness of the data is the responsibility of those supplying the data. To the extent we can, however, Segal does review the data for reasonableness and consistency. Based on our review of the data, we have no reason to doubt the substantial accuracy of the information on which we have based this report and we have no reason to believe there are facts or circumstances that would affect the validity of these results.

The measurements shown in this actuarial valuation may not be applicable for other purposes. Future actuarial measurements may differ significantly from the current measurements presented in this report due to such factors as the following: plan experience differing from that anticipated by the economic or demographic assumptions; changes in economic or demographic assumptions; increases or decreases expected as part of the natural operation of the methodology used for these measurements; and changes in. plan provisions or applicable law.

The actuarial calculations were directed under the supervision of Jeanette R. Cooper. We are members of the American Academy of Actuaries and meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion herein. To the best of our knowledge, the information supplied in this actuarial valuation is complete and accurate. The assumptions used in this actuarial valuation were selected by the Board based upon our analysis and recommendations. In our opinion, the assumptions are reasonable and take into account the experience of the Fund and reasonable expectations.

We hereby certify that the City of Atlanta General Employees' Pension Fund has been funded in conformity with the minimum funding standards specified in Code Section 47-20-10 of the Official Code of Georgia Annotated known as the Public Retirement Systems Standards Law. This certification covers the 2022 fiscal year of the Fund.

We look forward to reviewing this report at your next meeting and to answering any questions.

Sincerely,
Segal

Jeanette R. Cooper

Jeanette R. Cooper, FSA, FCA, MAAA, EA
Vice President and Consulting Actuary

Ben Kirkland, FSA, FCA, MAAA, EA
Consulting Actuary

Segal

Table of Contents

Table of Contents

Section 1: Actuarial Valuation Summary

Purpose and basis

This report has been prepared by Segal to present a valuation of the City of Atlanta General Employees' Pension Fund as of July 1, 2022. The valuation was performed to determine whether the assets and contributions are sufficient to provide the prescribed benefits.

The contribution requirements presented in this report are based on:

- The benefit provisions of the Pension Fund, as administered by the Board;
- The characteristics of covered active participants, inactive vested participants, and retired participants and beneficiaries as of June 30, 2022, provided by Strategic Benefits Advisors;
- The assets of the Fund as of June 30, 2022, provided by the Mauldin & Jenkins;
- Economic assumptions regarding future salary increases and investment earnings;
- Other actuarial assumptions regarding employee terminations, retirement, death, etc. and
- The funding policy adopted by the City.

Certain disclosure information required by GASB Statements No. 67 and 68 as of June 30 2023 and June 30 2022 for the Fund was provided in separate reports.

Valuation highlights

1. The July 1, 2022 valuation is used to determine the recommended, or actuarially determined contribution (ADC) for the fiscal year period July 1, 2023 to June 30, 2024 (FY'24). The recommended contribution is adjusted for interest to the middle of the fiscal period and satisfies the minimum funding standards under Georgia law Code Section 47-20-10.
2. The plan receives employee contributions of 8% of base salary for employees hired after August 31, 2011 and Hybrid Participants, and 12% or 13% of base salary for employees hired before September 1, 2011. The City contributes the recommended contribution amount which is net of employee contributions. The recommended contribution amount is composed of the employer normal cost including administrative expenses and a payment to amortize the Unfunded Actuarial Accrued Liability (UAAL) over 19 years. The recommended contribution is actuarially determined as a level percentage of payroll and will increase 3.00% annually if all assumptions are met.
3. Segal strongly recommends an actuarial funding method that targets 100% funding of the actuarial accrued liability. Generally, this implies payments that are ultimately at least enough to cover normal cost, interest on the unfunded actuarial accrued liability and the principal balance. The funding policy adopted by the City meets this standard.
4. Actual contributions made during the year ending June 30, 2022 of $51,750,000 were 100% of the actuarially determined contribution (ADC). In the prior year, actual contributions were $48,764,000, 100% of the prior year ADC.
5. The actuarial gain from investment and other experience is $13,035,378, or 0.65% of actuarial accrued liability.
6. The net experience loss from sources other than investment experience was 0.05% of the actuarial accrued liability. This loss is not significant.
7. The rate of return on the market value of assets was -12.19% for the July 1, 2021 to June 30, 2022 plan year. The return on the actuarial value of assets was 8.01% for the same period due to the recognition of prior years' investment gains and losses. This resulted in an actuarial gain when measured against the assumed rate of return of 7.00%. Given the low fixed income interest rate environment, target asset allocation and expectations of future investment returns for various asset classes, we advise the Board to continue to monitor actual and anticipated investment returns relative to the assumed long-term rate of return on investments of 7.00%.
8. The actuarial value of assets is 105.36% of the market value of assets. The investment experience in the past years has only been partially recognized in the actuarial value of assets. As the deferred net loss is recognized in future years, the cost of the Fund is likely to increase unless the net loss is offset by future experience. The recognition of the market losses of $75,251,416 will also have an impact on the future funded ratio. If the net deferred losses were recognized immediately in the actuarial value of assets, the ADC would increase from 25.05% to about 28.04% of projected payroll.
9. There were no plan changes are included for the first time in this valuation.

Changes from prior valuation

10. Since the prior valuation, the administrative expense assumption was increased by $10,000 to reflect a one-time expense. This change increased the ADC by less than 0.1%. The $10,000 increase is in addition to the annual 2.25% inflationary increase. There were no other changes in actuarial assumptions or methods.
11. The funded ratio (the ratio of the actuarial value of assets to actuarial accrued liability) is 73.76%, compared to the prior year funded ratio of 72.45%. This ratio is one measure of funding status, and its history is a measure of funding progress. Using the market value of assets, the funded ratio is 70.01%, compared to 84.39% as of the prior valuation date. These measurements are not necessarily appropriate for assessing the sufficiency of the plan assets to cover the estimated cost of settling the Plan's benefit obligation or the need for or the amount of future contributions.
12. The City's recommended contribution for FY '24 is $48.8 million, or 25.05% of projected payroll. This amount is an increase of $0.5 million from the prior valuation's cost and is mainly attributable to favorable investment returns on the smoothed actuarial value of assets. See *Section 2: Reconciliation of ADC* for additional details.
13. The unfunded actuarial accrued liability is $526.3 million, which is a decrease of $19.7 million since the prior valuation.

Risk

14. It is important to note that this actuarial valuation is based on plan assets as of June 30, 2022. The Fund's funded status does not reflect short-term fluctuations of the market, but rather is based on the market values on the last day of the plan year. Moreover, this actuarial valuation does not include any possible short-term or long-term impacts on mortality of the covered population that may emerge after June 30, 2022. Segal is available to prepare projections of potential outcomes of market conditions and other demographic experience upon request.
15. Since the actuarial valuation results are dependent on a given set of assumptions, there is a risk that emerging results may differ significantly as actual experience proves to be different from the assumptions. We have not been engaged to perform a detailed analysis of the potential range of the impact of risk relative to the Fund's future financial condition but have included a brief discussion of some risks that may affect the Fund in *Section 2*. A more detailed assessment would provide the Board with a better understanding of the inherent risks and could be important for the Fund because:
    - Retired participants account for most of the Fund's liabilities, leaving limited options for reducing costs in the event of adverse experience.
    - The Fund's asset allocation has potential for significant amount of investment return volatility.
    - The Board has not had a detailed risk assessment in recent years.

GASB

16. The disclosure information required for compliance with GASB Statement No. 67, *Financial Reporting for Pension Plans* for the fiscal year ended June 30, 2022, was released to the City's Finance Department on November 21, 2022. Information required for compliance with GASB Statement No. 68, *Accounting and Financial Reporting for Pensions*, for the fiscal year ended June 30, 2023, based on a June 30, 2022 measurement date was released to the City's Finance Department on April 13, 2023.

Summary of key valuation results

Fiscal Year		2023	2022
Contributions for fiscal year beginning July 1:	• Actuarially determined contributions	$48,771,929	$48,330,445
	• Actuarially determined contributions as a percent of projected payroll	25.05%	24.72%
Plan Year		**2022**	**2021**
Actuarial accrued liability for plan year beginning July 1:	• Retired participants and beneficiaries	$1,459,062,918	$1,421,485,585
	• Inactive vested participants	23,521,367	17,459,342
	• Inactive participants due a refund of employee contributions	6,265,402	4,985,574
	• Active participants	516,631,603	537,556,314
	• Total	2,005,481,290	1,981,486,815
	• Normal cost including administrative expenses	26,286,881	26,099,033
Assets for plan year beginning July 1:	• Market value of assets (MVA)	$1,403,948,000	$1,672,138,000
	• Actuarial value of assets (AVA)	1,479,199,416	1,435,548,631
	• Actuarial value of assets as a percentage of market value of assets	105.36%	85.85%
Funded status for plan year beginning July 1:	• Unfunded actuarial accrued liability on market value of assets	$601,533,290	$309,348,815
	• Funded percentage on MVA basis	70.01%	84.39%
	• Unfunded actuarial accrued liability on actuarial value of assets	$526,281,874	$545,938,184
	• Funded percentage on AVA basis	73.76%	72.45%
	• Amortization period on an AVA basis	19 years	20 years
Key assumptions:	• Net investment return	7.00%	7.00%
	• Inflation rate	2.25%	2.25%
	• Across-the-board payroll increase	3.00%	3.00%
Demographic data for plan year beginning July 1:	• Number of retired participants and beneficiaries	3,992	3,970
	• Number of inactive vested participants	234	160
	• Number of inactive participants due a refund of employee contributions	1,322	1,116
	• Number of active participants	3,657	3,757
	• Covered payroll	$189,021,981	$189,816,699
	• Average payroll	$51,688	$50,523
	• Projected payroll	$194,692,640	$195,511,200

Important information about actuarial valuations

An actuarial valuation is a budgeting tool with respect to the financing of future projected obligations of a pension plan. It is an estimated forecast – the actual long-term cost of the plan will be determined by the actual benefits and expenses paid and the actual investment experience of the plan.

In order to prepare a valuation, Segal relies on a number of input items. These include:

Plan provisions	Plan provisions define the rules that will be used to determine benefit payments, and those rules, or the interpretation of them, may change over time. Even where they appear precise, outside factors may change how they operate. It is important to keep Segal informed with respect to plan provisions and administrative procedures, and to review the plan summary included in our report to confirm that Segal has correctly interpreted the plan of benefits.
Participant information	An actuarial valuation for a plan is based on data provided to the actuary by the plan administrator. Segal does not audit such data for completeness or accuracy, other than reviewing it for obvious inconsistencies compared to prior data and other information that appears unreasonable. It is important for Segal to receive the best possible data and to be informed about any known incomplete or inaccurate data.
Financial information	Part of the cost of a plan will be paid from existing assets — the balance will need to come from future contributions and investment income. The valuation is based on the asset values as of the valuation date, as provided by the auditor. A snapshot as of a single date may not be an appropriate value for determining a single year's contribution requirement, especially in volatile markets. Plan sponsors often use an "actuarial value of assets" that differs from market value to gradually reflect year-to-year changes in the market value of assets in determining the contribution requirements.
Actuarial assumptions	In preparing an actuarial valuation, Segal starts by developing a forecast of the benefits to be paid to existing plan participants for the rest of their lives and the lives of their beneficiaries. This requires actuarial assumptions as to the probability of death, disability, withdrawal, and retirement of participants in each year, as well as forecasts of the plan's benefits for each of those events. In addition, the benefits forecasted for each of those events in each future year reflect actuarial assumptions as to salary increases and cost-of-living adjustments. The forecasted benefits are then discounted to a present value, typically based on an estimate of the rate of return that will be achieved on the plan's assets. All of these factors are uncertain and unknowable. Thus, there will be a range of reasonable assumptions, and the results may vary materially based on which assumptions are selected within that range.That is, there is no right answer (except with hindsight). It is important for any user of an actuarial valuation to understand and accept this constraint. The actuarial model may use approximations and estimates that will have an immaterial impact on our results. In addition, the actuarial assumptions may change over time, and while this can have a significant impact on the reported results, it does not mean that the previous assumptions or results were unreasonable or wrong.

Section 1: Actuarial Valuation Summary

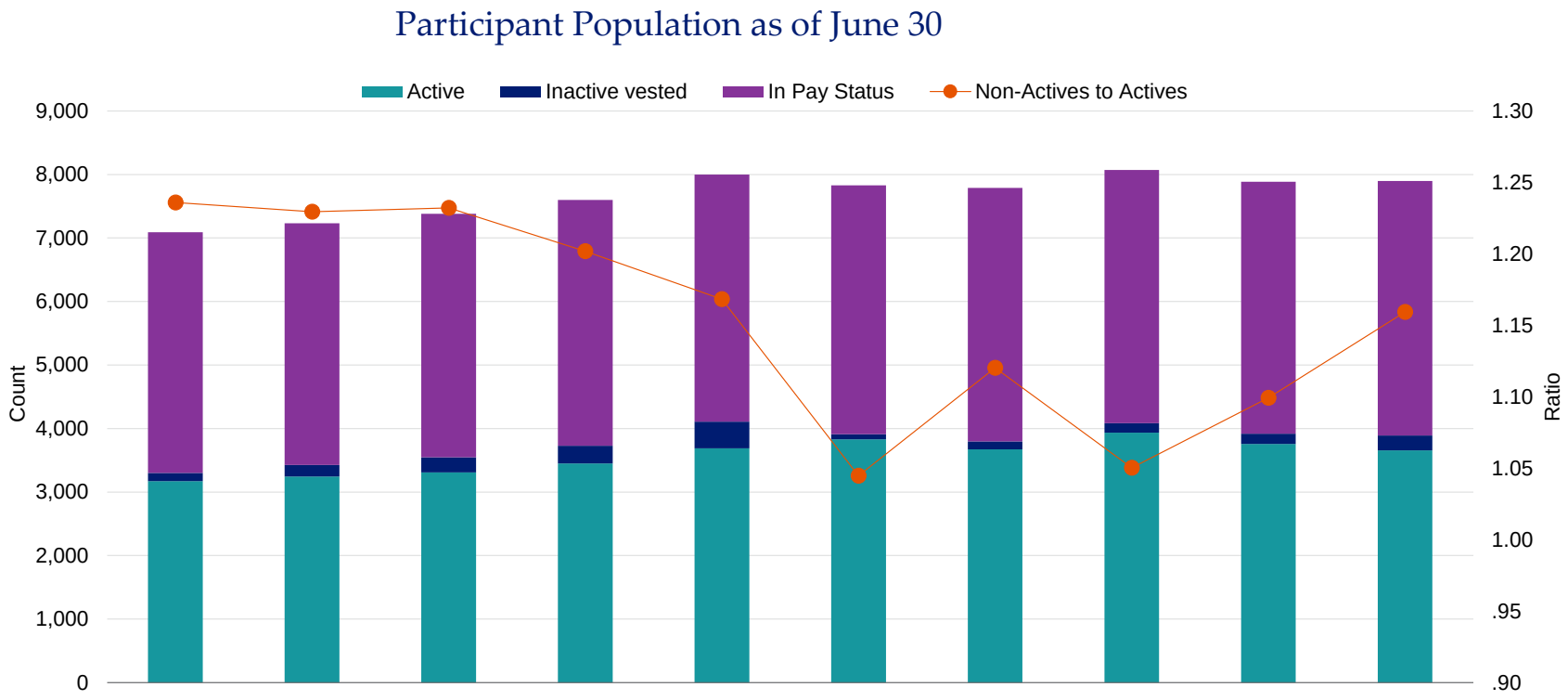
The user of Segal's actuarial valuation (or other actuarial calculations) should keep the following in mind:

The actuarial valuation is prepared at the request of the Board. Segal is not responsible for the use or misuse of its report, particularly by any other party.
An actuarial valuation is a measurement at a specific date — it is not a prediction of a plan's future financial condition. Accordingly, Segal did not perform an analysis of the potential range of financial measurements, except where otherwise noted.
If the Board is aware of any event or trend that was not considered in this valuation that may materially change the results of the valuation, Segal should be advised, so that we can evaluate it.
Segal does not provide investment, legal, accounting, or tax advice. Segal's valuation is based on our understanding of applicable guidance in these areas and of the plan provisions, but they may be subject to alternative interpretations. The Board should look to their other advisors for expertise in these areas.
While Segal maintains extensive quality assurance procedures, an actuarial valuation involves complex computer models and numerous inputs. In the event that an inaccuracy is discovered after presentation of Segal's valuation, Segal may revise that valuation or make an appropriate adjustment in the next valuation.
Segal's report shall be deemed to be final and accepted by the Board upon delivery and review. Trustees should notify Segal immediately of any questions or concerns about the final content.

As Segal has no discretionary authority with respect to the management or assets of the Fund, it is not a fiduciary in its capacity as actuaries and consultants with respect to the Fund.

Section 2: Actuarial Valuation Results

Participant information



	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
In Pay Status[1]	3,790	3,805	3,834	3,874	3,889	3,920	3,991	3,986	3,970	3,992
Inactive Vested[2]	129	182	241	275	420	81	125	148	160	234
Active[3]	3,171	3,243	3,307	3,452	3,688	3,830	3,674	3,936	3,757	3,657
Ratio	1.24	1.23	1.23	1.20	1.17	1.04	1.12	1.05	1.10	1.16

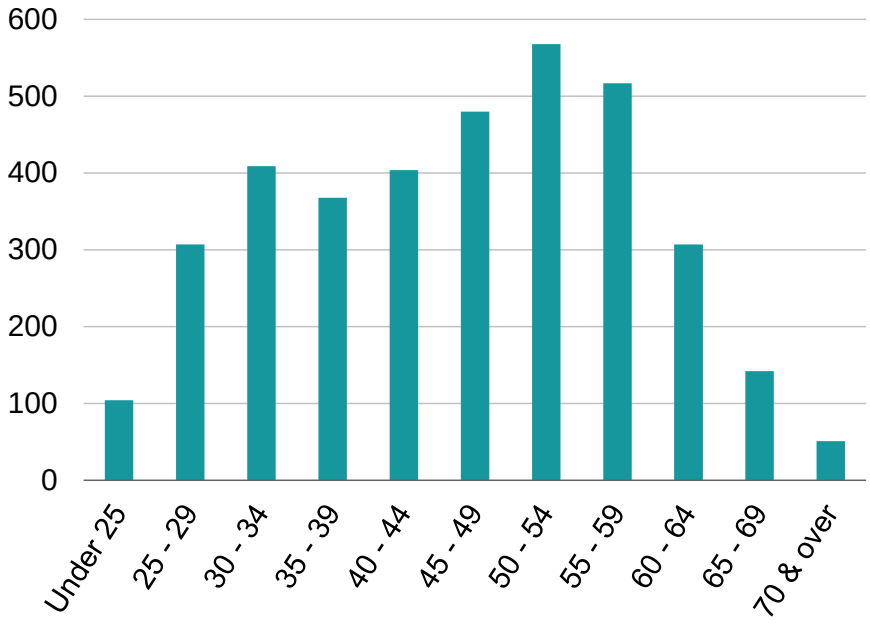
[1]Beginning in 2022, counts do not include suspended retirees and beneficiaries.
[2]Excludes terminated participants due a refund of employee contributions through 2017. Beginning in 2018, excludes terminated participants due a refund of employee contributions
[3]Excludes participants receiving Workers' Compensation benefits

Active participants

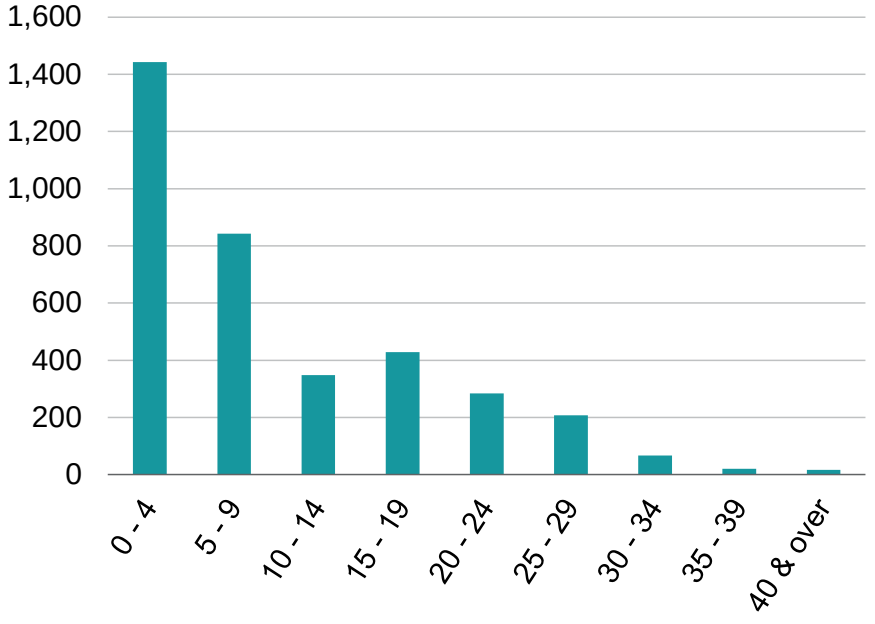
As of June 30,	2022	2021	Change
Active participants	3,657	3,757	-2.7%
Average age	46.5	46.5	0.0 years
Average years of service	9.9	10.1	-0.2 years
Average compensation	$51,688	$50,523	2.3%

Distribution of Active Participants as of June 30, 2022

Actives by Age



Actives by Years of Service



Inactive participants

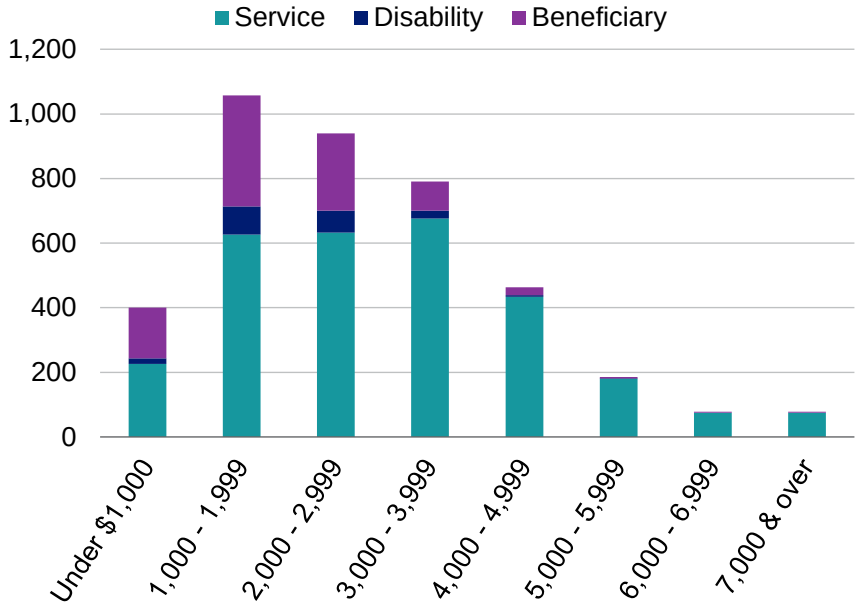
- In this year's valuation, there were 234 inactive participants with a vested right to a deferred or immediate vested benefit.
- In addition, there were 1,322 inactive participants entitled to a return of their employee contributions. This is an increase of over 15% from the prior year's count.

Retired participants and beneficiaries

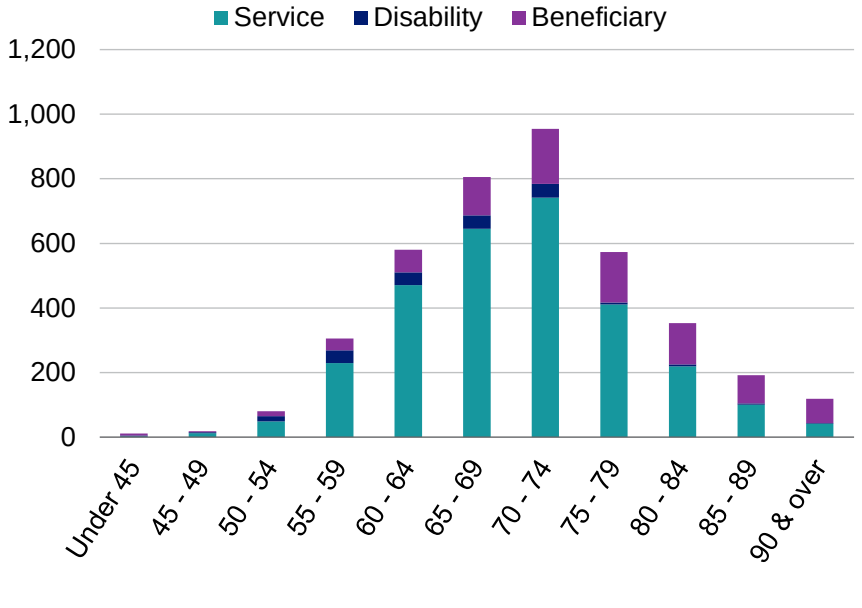
As of June 30,	2022	2021	Change
Retired participants	3,127	3,129	-0.1%
Beneficiaries	865	841	2.9%
Average age	71.3	70.9	0.4 years
Average amount	$2,803	$2,720	3.1%
Total monthly amount	$11,191,096	$10,796,983	3.7%

Distribution of Retired Participants and Beneficiaries as of June 30, 2022

By Type and Monthly Amount



By Type and Age



Historical plan population

Participant Data Statistics: 2013 – 2022

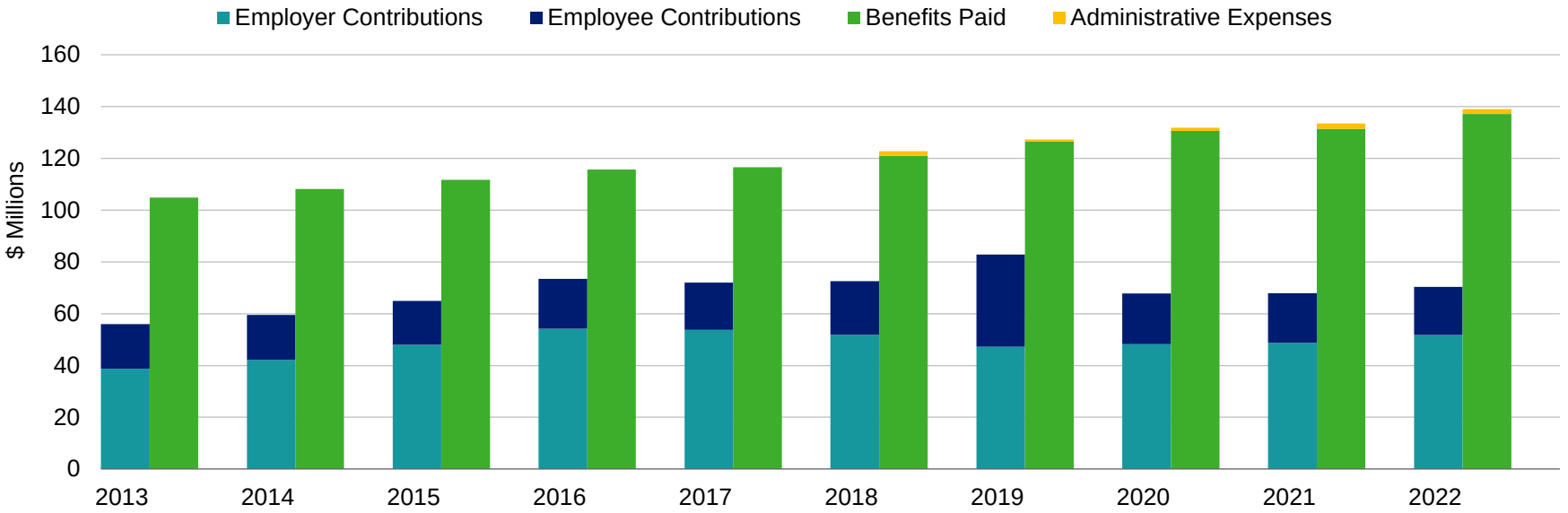
	Active Participants			Retired Participants and Beneficiaries		
Year Ended June 30	Count	Average Age	Average Service	Count[1]	Average Age	Average Monthly Amount
2013	3,171	47.3	12.5	3,790	68.0	$2,293
2014	3,243	47.4	12.4	3,805	68.3	2,342
2015	3,307	47.3	12.0	3,834	68.7	2,387
2016	3,452	46.8	11.2	3,874	69.3	2,417
2017	3,688	46.4	10.7	3,889	69.8	2,455
2018	3,830	46.3	10.4	3,920	70.1	2,525
2019	3,674	46.3	10.3	3,991	70.4	2,598
2020	3,936	45.8	9.6	3,986	70.7	2,675
2021	3,757	46.5	10.1	3,970	70.9	2,720
2022	3,657	46.5	9.9	3,992	71.3	2,803

[1]Beginning in 2022, counts do not include suspended retirees and beneficiaries.

Financial information

- Retirement plan funding anticipates that, over the long term, both contributions (less administrative expenses) and investment earnings (less investment fees) will be needed to cover benefit payments. Retirement plan assets change as a result of the net impact of these income and expense components.

Comparison of Contributions with Benefits and Expenses for Years Ended June 30, 2013 - 2022[1]



[1]Prior to 2018 investment earnings were net of investment fees and administrative expenses.

Section 2: Actuarial Valuation Results

It is desirable to have level and predictable plan costs from one year to the next. For this reason, the Board has approved an asset valuation method that gradually adjusts to market value. Under this valuation method, the full value of market fluctuations is not recognized in a single year and, as a result, the asset value and the plan costs are more stable. The amount of the adjustment to recognize market value is treated as income, which may be positive or negative. Realized and unrealized gains and losses are treated equally and, therefore, the sale of assets has no immediate effect on the actuarial value.

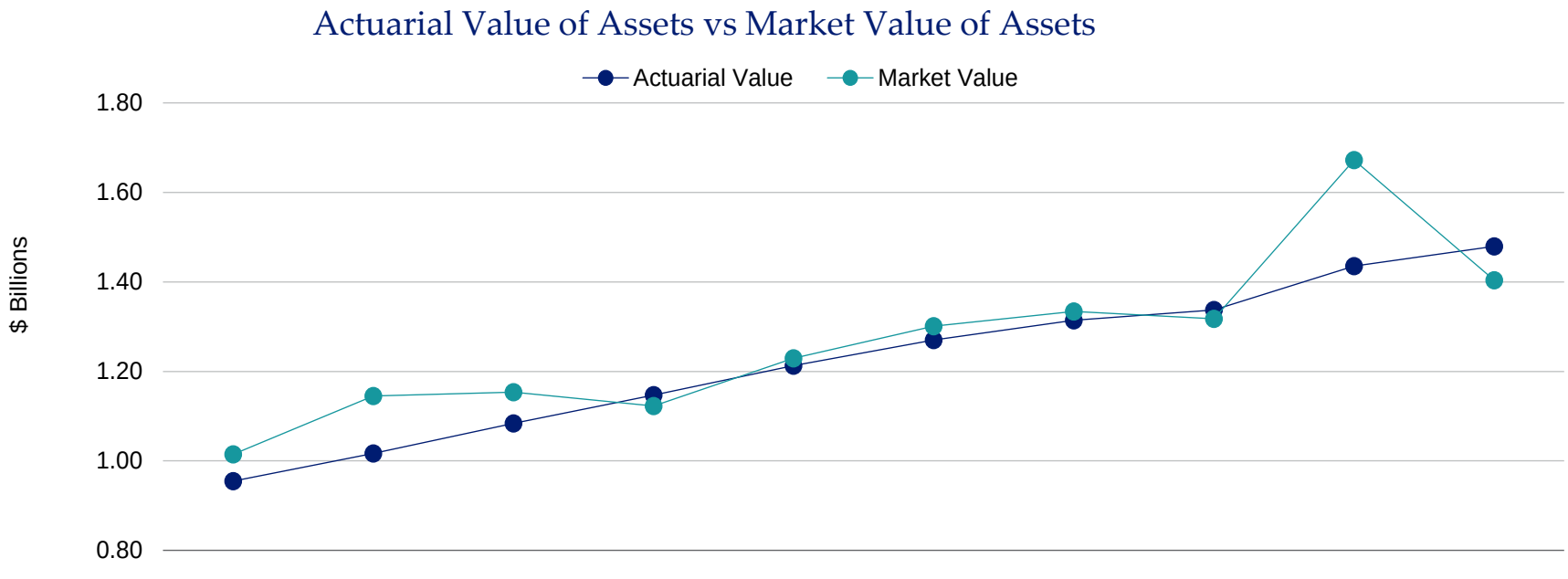
Determination of Actuarial Value of Assets for Year Ended June 30, 2022

1	Market value of assets, June 30, 2022				$1,403,948,000
2	Calculation of unrecognized return	**Original Amount[1]**	**Percent Deferred[2]**	**Unrecognized Amount[3]**	
	(a) Year ended June 30, 2022	-$314,266,605	80%	-$251,413,284	
	(b) Year ended June 30, 2021	329,889,850	60%	197,933,910	
	(c) Year ended June 30, 2020	-46,742,145	40%	-18,696,858	
	(d) Year ended June 30, 2019	-15,375,919	20%	-3,075,184	
	(e) Year ended June 30, 2018	34,365,719	0%	0	
	(f) Total unrecognized return				-$75,251,416
3	Preliminary actuarial value: (1) - (2f)				1,479,199,416
4	Adjustment to be within 20% corridor				0
5	Final actuarial value of assets as of June 30, 2022: (3) + (4)				$1,479,199,416
6	Actuarial value as a percentage of market value: (5) ÷ (1)				105.36%
7	Amount deferred for future recognition: (1) - (5)[4]				-$75,251,416

[1]Total return minus expected return on a market value basis
[2]Percent deferred applies to the current valuation year
[3]Recognition at 20% per year over five years
[4]Deferred return as of June 30, 2022 recognized in each of the next four years:

(a) Amount recognized on June 30, 2023	-$9,298,964
(b) Amount recognized on June 30, 2024	-6,223,780
(c) Amount recognized on June 30, 2025	3,124,649
(d) Amount recognized on June 30, 2026	-62,853,321

Asset history for years ended June 30

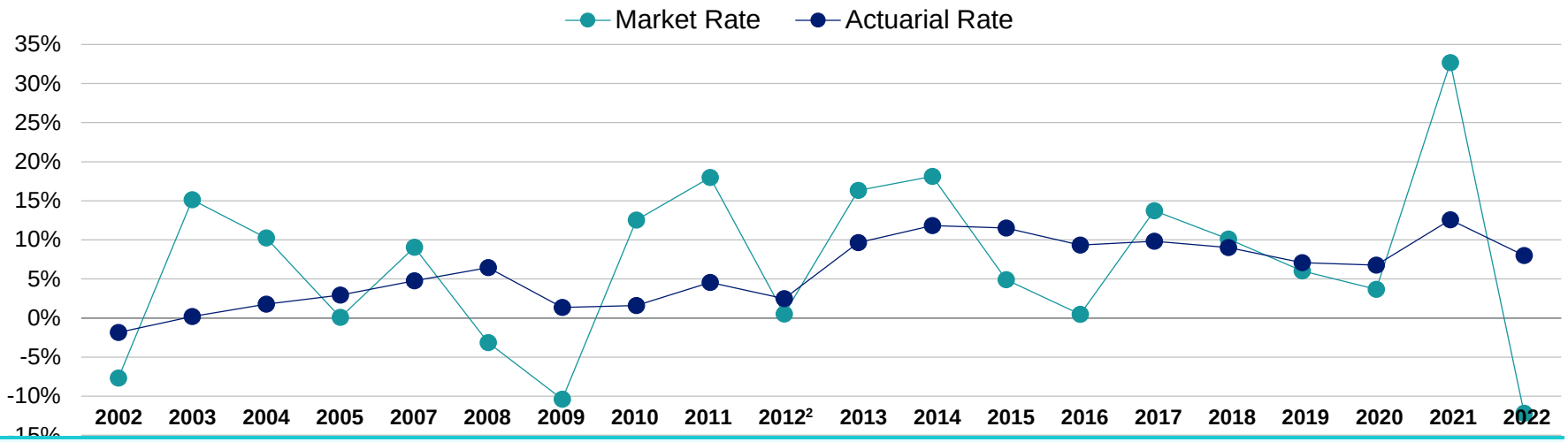


	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Actuarial Value[1]	$0.95	$1.02	$1.08	$1.15	$1.21	$1.27	$1.31	$1.34	$1.44	$1.48
Market Value[1]	1.01	1.15	1.15	1.12	1.23	1.30	1.33	1.32	1.67	1.40
Ratio	0.94	0.89	0.94	1.02	0.99	0.98	0.99	1.01	0.86	1.05

[1]In $ billions

Section 2: Actuarial Valuation Results

Market and Actuarial Rates of Return for Years[1] Ended June 30



	2002	2003	2004	2005	2007	2008	2009	2010	2011	2012[2]	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Market rate	-7.67%	15.12%	10.24%	0.09%	9.06%	-3.15%	-10.39%	12.53%	17.98%	0.53%	16.32%	18.14%	4.91%	0.49%	13.73%	10.10%	6.05%	3.66%	32.67%	-12.19%
Actuarial rate	-1.82%	0.19%	1.78%	2.93%	4.78%	6.45%	1.36%	1.60%	4.56%	2.49%	9.66%	11.84%	11.51%	9.32%	9.82%	9.03%	7.09%	6.76%	12.58%	8.01%
Assumed rate	8.00%	8.00%	8.00%	8.00%	8.00%	8.00%	8.00%	8.00%	8.00%	8.00%	7.50%	7.50%	7.50%	7.50%	7.25%	7.25%	7.25%	7.25%	7.00%	7.00%

Average Rates of Return	Actuarial Value	Market Value
Most recent five-year average return:	8.70%	6.96%
Most recent ten-year average return:	9.44%	8.40%
Most recent fifteen-year average return:	7.77%	7.01%
Twenty-year average return:	6.61%	6.74%

[1]Prior to 2007, financial information was based on 12-month periods ending December 31.
[2]Actuarial value rate of return before method change.

Actuarial experience

Assumptions should consider experience and should be based on reasonable expectations for the future.

Each year actual experience is compared to that projected by the assumptions. Differences are reflected in the actuarial valuation.

Assumptions are not changed if experience is believed to be a short-term development that will not continue over the long term. On the other hand, if experience different than assumed is expected to continue, assumptions are changed.

Actuarial Experience for Year Ended June 30, 2022

1	Gain/(loss) from investments[1]	$14,135,436
2	Gain/(loss) from administrative expenses	-497,723
3	Net gain/(loss) from other experience	-602,335
4	Net experience gain/(loss): **1 + 2 + 3**	$13,035,378

[1]Details on next page

Investment experience

Actuarial planning is long term. The obligations of a pension plan are expected to continue for the lifetime of all its participants.

The assumed long-term rate of return of 7.00% considers past experience, the asset allocation policy of the Board and future expectations.

Investment Experience

		Year Ended June 30, 2022	
		Market Value	**Actuarial Value**
1	Net investment income	-$199,617,000	$112,223,785
2	Average value of assets	1,637,851,500	1,401,262,131
3	Rate of return: **1 ÷ 2**	-12.19%	8.01%
4	Assumed rate of return	7.00%	7.00%
5	Expected investment income: **2 x 4**	114,649,605	98,088,349
6	Investment gain/(loss): **1 - 5**	-$314,266,605	$14,135,436

Non-investment experience

Administrative expenses

Administrative expenses for the year ended June 30, 2022 totaled $1,838,000, as compared to the assumption of $1,311,700 as of the beginning of the year. This resulted in an experience loss of $497,723 for the year, including an adjustment for interest. Because it is expected that these expenses will continue to increase, the actuarial assumption includes an annual 2.25% inflationary increase.

Other experience

There are other differences between the expected and the actual experience that appear when the new valuation is compared with the projections from the previous valuation. These include:

- Mortality experience (more or fewer than expected deaths)
- The extent of turnover among participants
- Retirement experience (earlier or later than projected)
- The number of disability retirements (more or fewer than projected)
- Salary increases (greater or smaller than projected), and
- Inflationary cost-of-living adjustments higher or lower than anticipated.

The net loss from this other experience for the year ended June 30, 2022 amounted to $602,335, which is less than 0.1% of the actuarial accrued liability. Overall, the liability loss was not significant.

Actuarial assumptions

- The assumed expenses were increased by $10,000 to cover the cost of a one-time expense. This is in addition to the annual 2.25% inflationary increase.
- There were no other assumption changes reflected in this report.
- Details on actuarial assumptions and methods are in Section 4, Exhibit I.

Plan provisions

- There were no changes in plan provisions since the prior valuation.
- A summary of plan provisions is in Section 4, Exhibit II.

Unfunded Actuarial Accrued Liability

Development of Unfunded Actuarial Accrued Liability for Year Ended June 30, 2022

1	Unfunded actuarial accrued liability at beginning of year	$545,938,184
2	Normal cost at beginning of year	26,099,033
3	Total expected contributions	-70,302,000
4	Interest on 1, 2 & 3	37,582,035
5	Expected unfunded actuarial accrued liability	$539,317,252
6	Changes due to experience gains and losses	-$13,035,378
7	Unfunded actuarial accrued liability at end of year	$526,281,874

Actuarially determined contribution

The actuarially determined contribution is equal to the employer normal cost payment and a payment on the unfunded actuarial accrued liability. As of July 1, 2022, the actuarially determined contribution is $48,771,929, or 25.05% of projected payroll.

The Board sets the methodology used to calculate the actuarially determined contribution based on a closed level percent of payroll amortization period of 30 years, established with the July 1, 2010 valuation. As of July 1, 2020, the amortization schedule was reset to 21 years to match the Police Officers' and Firefighters' Funds. As of July 1, 2022, there are 19 years remaining on this schedule.

The contribution requirement for the 2023-2024 fiscal year is based on the data previously described, the actuarial assumptions and Plan provisions described in *Section 4*, including all changes affecting future costs adopted at the time of the actuarial valuation, actuarial gains and losses, and changes in the actuarial assumptions.

Actuarially Determined Contribution for Fiscal Year Beginning July 1

		2023		2022	
		Amount	% of Projected Payroll	Amount	% of Projected Payroll
1	Total normal cost	$24,935,668	12.81%	$24,787,333	12.68%
2	Administrative expenses	1,351,213	0.69%	1,311,700	0.67%
3	Expected employee contributions	-18,702,228	-9.60%	-19,008,575	-9.72%
4	Employer normal cost: (1) + (2) + (3)	$7,584,653	3.90%	$7,090,458	3.63%
5	Actuarial accrued liability	$2,005,481,290		$1,981,486,815	
6	Actuarial value of assets	1,479,199,416		1,435,548,631	
7	Unfunded actuarial accrued liability: (5) - (6)	$526,281,874		$545,938,184	
8	Payment on projected unfunded actuarial accrued liability	38,191,660	19.62%	38,271,488	19.57%
9	Adjustment for timing[1]	2,995,616	1.53%	2,968,499	1.52%
10	Actuarially determined contribution: (8) + (10) + (11)	$48,771,929	25.05%	$48,330,445	24.72%
11	Projected payroll	$194,692,640		$195,511,200	

[1]Actuarially determined contributions are assumed to be paid at the middle of every year. Calculated as {[(4) + (8)] x [1.07 ^ 0.50] x 1.03} – (4) – (8).

Reconciliation of actuarially determined contribution

Reconciliation of Actuarially Determined Contribution for Fiscal Year Ending 2023 to 2024

		Amount	% of Projected Payroll
1	Actuarially determined contribution for Fiscal Year ending June 30, 2023	$48,330,445	24.72%
2	Effect of expected change in amortization payment due to payroll growth	1,223,280	0.63%
3	Effect of investment gain on the smoothed actuarial value of assets	-1,092,920	-0.56%
4	Effect of contributions more than actuarially determined contribution	-300,465	-0.15%
5	Effect of other gains and losses on accrued liability	85,054	0.04%
6	Effect of change in administrative expense assumption	10,654	0.01%
7	Net effect of other changes, including composition and number of participants	515,881	0.26%
8	Total change	$441,484	0.23%
9	Total change in percentage due to payroll change		0.10%
10	Actuarially determined contribution for Fiscal Year ending June 30, 2024	$48,771,929	25.05%

History of employer contributions

History of Employer Contributions: 2014 – 2023

Year Ended June 30	Actuarially Determined Employer Contribution (ADC[1])	Actual Employer Contribution	Percent Contributed
2014	$42,145,284	$42,145,000	100.00%
2015	47,969,283	48,015,000	100.10%
2016	54,235,740	54,236,000	100.00%
2017	53,815,973	53,817,000	100.00%
2018	51,902,994	51,903,000	100.00%
2019	47,220,491	47,220,000	100.00%
2020	48,218,811	48,219,000	100.00%
2021	48,763,497	48,764,000	100.00%
2022	51,750,478	51,750,000	100.00%
2023	48,330,445	--	--

[1]Prior to GASB67/68, this amount was the Annual Required Contribution (ARC).

Risk

The actuarial valuation results are dependent on a single set of assumptions; however, there is a risk that emerging results may differ significantly as actual experience proves to be different from the current assumptions.

We have not been engaged to perform a detailed analysis of the potential range of the impact of risk relative to the Fund's future financial condition but have included a brief discussion of some risks that may affect the Fund.

- Economic and Other Related Risks. Potential implications for the Fund due to the following economic effects (that were not reflected as of the valuation date) include:
  - Volatile financial markets and investment returns lower than assumed
  - High inflationary environment impacting salary increases and COLAs
  - Lingering direct and indirect effects of the COVID-19 pandemic
- Investment Risk (the risk that returns will be different than expected

  If the actual return on market value for the prior plan year were 1% different (either higher or lower), the unfunded actuarial liability would change by 3.11%, or about $16,378,515, disregarding the asset smoothing method.

  Since the Fund's assets are much larger than contributions, investment performance may create volatility in the actuarially determined contribution requirements.

  The market value rate of return over the last 20 years has ranged from a low of -12.19% in 2022 to a high of 32.67% in 2021.
- Longevity Risk (the risk that mortality experience will be different than expected)

  The actuarial valuation includes an expectation of future improvement in life expectancy. Emerging plan experience that does not match these expectations will result in either an increase or decrease in the actuarially determined contribution.
- Contribution Risk (the risk that actual contributions will be different from actuarially determined contribution)

  The City's funding policy requires payment of the actuarially determined contribution. As long as this policy is adhered to, contribution risk is negligible.

  As part of the funding policy, if the valuation results calculated under the actuarial assumptions and methods in effect at the time of the 2011 Pension Reform would result in the Actual Required Contribution (ARC) exceeding 35% of total payroll (the "cap"), a Cost Recovery Plan would be implemented to reduce the ARC to no more than 35%. A Cost Recovery Plan can include increasing the City or employee contributions, modifying pension benefits, or using alternative funding sources. To date a Cost Recovery Plan has not needed to be implemented.

Section 2: Actuarial Valuation Results

- Demographic Risk (the risk that participant experience will be different than assumed)

  Examples of this risk include:

  - Actual retirements occurring earlier or later than assumed. The value of retirement plan benefits is sensitive to the rate of benefit accruals and any early retirement subsidies that apply.
  - More or less active participant turnover than assumed.

- There are external factors including legislative or financial reporting changes that could impact the Fund's funding and disclosure requirements. While we do not assume any changes in such external factors, it is important to understand that they could have significant consequences for the Fund.

- Actual Experience Over the Last Ten Years

  Past experience can help demonstrate the sensitivity of key results to the Fund's actual experience. Over the past ten years:

  - The investment gain(loss) on a market value basis for a year has ranged from a loss of $314,266,605 in 2022 to a gain of $329,889,850 in 2021.
  - The investment gain(loss) on an actuarial value basis for a year has ranged from a loss of $6,313,338 in 2020 to a gain of $72,800,138 in 2021.
  - The funded percentage on the market value of assets has ranged from a low of 54.44% as of July 1, 2013 to a high of 84.39% as of July 1, 2021.
  - The funded percentage on the actuarial value of assets has ranged from a low of 51.24% as of July 1, 2013 to a high of 73.76% as of July 1, 2022.

- Maturity Measures

  As pension plans mature, the cash needed to fulfill benefit obligations will increase over time. Therefore, cash flow projections and analysis should be performed to assure that the Fund's asset allocation is aligned to meet emerging pension liabilities.

  Currently the Plan has a non-active to active participant ratio of 1.16.

  For the prior year, benefits paid and administrative expenses were $68,673,000 more than contributions received. Plans with high levels of negative cash flows may have a need for a larger allocation to income generating assets, which can create a drag on investment return.

Section 2: Actuarial Valuation Results

- Detailed Risk Assessment

  A more detailed assessment of the risks would provide the Board with a better understanding of the risks inherent in the Fund. This assessment may include scenario testing, sensitivity testing, stress testing, and stochastic modeling.

  A detailed risk assessment could be important for the Fund because:

  – Retired participants account for most of the Fund's liabilities, leaving limited options for reducing plan costs in the event of adverse experience.
  – The Fund's asset allocation has potential for a significant amount of investment return volatility.
  – The Board has not had a detailed risk assessment in recent years.

GFOA funded liability by type

The Actuarial Accrued Liability represents the present value of benefits earned, calculated using the Plan's actuarial cost method. The Actuarial Value of Assets reflects the financial resources available to liquidate the liability. The portion of the liability covered by assets reflects the extent to which accumulated plan assets are sufficient to pay future benefits, and is shown for liabilities associated with employee contributions, pensioner liabilities, and other liabilities. The Government Finance Officers Association (GFOA) recommends that the funding policy aim to achieve a funded ratio of 100 percent.

GFOA Funded Liability by Type as of June 30

	2022	2021
Actuarial accrued liability (AAL)		
Active member contributions	$199,796,452	$152,147,032
Retirees and beneficiaries	1,459,062,918	1,421,485,585
Active and inactive members (employer-financed)	346,621,920	407,854,198
Total	$2,005,481,290	$1,981,486,815
Actuarial value of assets	1,479,199,416	1,435,548,631
Cumulative portion of AAL covered		
Active member contributions	100.00%	100.00%
Retirees and beneficiaries	87.69%	90.29%
Active and inactive members (employer-financed)	0.00%	0.00%

Actuarial balance sheet

An overview of the Plan's funding is given by an Actuarial Balance Sheet. In this approach, first the amount and timing of all future payments that will be made by the Fund for current participants is determined. Then these payments are discounted at the valuation interest rate to the date of the valuation, thereby determining the present value, referred to as the "liability" of the Fund.

Second, this liability is compared to the assets. The "assets" for this purpose include the net amount of assets already accumulated by the Plan, the present value of future member contributions, the present value of future employer normal cost contributions, and the present value of future employer amortization payments for the unfunded actuarial accrued liability.

Actuarial Balance Sheet

	Year Ended	
	June 30, 2022	**June 30, 2021**
Liabilities		
Present value of benefits for retired participants and beneficiaries	$1,459,062,918	$1,421,485,585
Present value of benefits for inactive vested participants	29,786,769	22,444,916
Present value of benefits for active participants	706,847,428	729,841,963
Total liabilities	$2,195,697,115	$2,173,772,464
Assets		
Total valuation value of assets	$1,479,199,416	$1,435,548,631
Present value of future contributions by members	159,949,591	163,311,014
Present value of future employer contributions for:		
Entry age cost	30,266,234	28,974,635
Unfunded actuarial accrued liability	526,281,874	545,938,184
Total of current and future assets	$2,195,697,115	$2,173,772,464

Actuarial Present Value of Accumulated Plan Benefits

The actuarial present value of accumulated plan benefits is shown below as of July 1, 2022 and as of July 1, 2021.

Actuarial Present Value of Accumulated Plan Benefits

	Benefit Information Date	
	July 1, 2022	**July 1, 2021**
Actuarial present value of vested accumulated plan benefits:		
➢ Participants currently receiving payments	$1,459,062,918	$1,421,485,585
➢ Other vested benefits	406,324,442	399,365,048
➢ Total vested benefits (PVVB)	1,865,387,360	1,820,850,633
Actuarial present value of non-vested accumulated plan benefits	41,837,552	45,023,037
Total actuarial present value of accumulated plan benefits (PVAB)	$1,907,224,912	$1,865,873,670
Actuarial Value of Assets (AVA)	$1,479,199,416	$1,435,548,631
Market Value of Assets (MVA)	$1,403,948,000	$1,672,138,000
Funded Ratios (PVVB):		
➢ AVA as a percentage of present value of vested accumulated benefits	79.30%	78.84%
➢ MVA as a percentage of present value of vested accumulated benefits	75.26%	91.83%
Funded Ratios (PVAB):		
➢ AVA as a percentage of present value of accumulated benefits	77.56%	76.94%
➢ MVA as a percentage of present value of accumulated benefits	73.61%	89.62%

Note: the amounts stated as vested benefits include employee contribution accounts, which are considered 100% vested.

Section 2: Actuarial Valuation Results

The factors that affected the change in the actuarial present value of accumulated plan benefits from the preceding to the current benefit information date are as follows:

Factors	Change in Actuarial Present Value of Accumulated Plan Benefits
Benefits accumulated, net experience gain or loss, changes in data	$52,676,880
Benefits paid	-137,137,000
Interest	125,811,362
Total	$41,351,242

State minimum requirements

Under Georgia minimum funding requirements, the liability may be amortized as a percent of payroll, rather than a fixed dollar amount. In general, with fixed dollar amortization, actual experience close to the assumptions will result in a total contribution requirement (the normal cost plus the payment on the unfunded actuarial liability) that decreases over time as a percentage of payroll. With percentage of payroll amortization, given expected experience, the total contribution requirement should remain level as a percentage of payroll.

Prior to the 2005 valuation, the Plan had adopted the policy of amortizing the unfunded actuarial liability as a level percentage of payroll over a closed 40-year period from January 1, 1979. At January 1, 2005, the amortization was reset to a closed 20-year period. Effective July 1, 2008, the amortization period was changed to an open 30-year period and effective July 1, 2010, the amortization period was changed to a closed 30-year period. Effective with the July 1, 2020 valuation, the amortization period was reset to a closed 21-year period to be consistent with the Police Officers' and Firefighters' Funds. The contributions determined under this method continue to meet the Georgia minimum funding requirements by virtue of Georgia Code Section 47-20-10(b).

Section 3: Supplemental Information

Exhibit A: Table of Plan Demographics

Category	Year Ended June 30 2022	2021	Change From Prior Year
Active participants in valuation:			
Number	3,657	3,757	-2.7%
Average age	46.5	46.5	0.0 years
Average years of service	9.9	10.1	-0.2 years
Projected total payroll	$189,021,981	$189,816,699	-0.4%
Projected average payroll	51,688	50,523	2.3%
Account balances[1]	199,796,452	152,147,032	31.3%
Total active vested participants	2,213	2,245	-1.4%
Inactive participants			
• Inactive vested participants	234	160	46.3%
• Inactive nonvested participants due a refund	1,322	1,116	18.5%
Retired participants:			
Number in pay status	2,923	2,911	0.4%
Average age	70.4	70.1	0.3 years
Average monthly benefit	$3,104	$3,012	3.1%
Disabled participants:			
Number in pay status	204	208	-1.9%
Average age	65.2	64.8	0.4 years
Average monthly benefit	$2,097	$2,061	1.7%
Beneficiaries:			
Number in pay status	865	841	2.9%
Average age	75.6	75.4	0.2 years
Average monthly benefit	$1,952	$1,886	3.5%

[1]The account balances shown for 2022 include interest. Account balances in 2021 were provided without interest.

Exhibit B: Participants in Active Service as of June 30, 2022 by Age, Years of Service, and Average Compensation[1]

		Years of Service								
Age	**Total**	**0 - 4**	**5 - 9**	**10 - 14**	**15 - 19**	**20 - 24**	**25 - 29**	**30 - 34**	**35 - 39**	**40 & over**
Under 25	104	102	2	- -	- -	- -	- -	- -	- -	- -
	$42,954	$42,934		- -	- -	- -	- -	- -	- -	- -
25 - 29	307	267	40	- -	- -	- -	- -	- -	- -	- -
	43,297	43,078	44,759	- -	- -	- -	- -	- -	- -	- -
30 - 34	409	263	135	11	- -	- -	- -	- -	- -	- -
	44,382	41,832	48,913	$49,748	- -	- -	- -	- -	- -	- -
35 - 39	368	188	113	39	28	- -	- -	- -	- -	- -
	49,786	45,214	52,076	58,952	$58,472	- -	- -	- -	- -	- -
40 - 44	404	161	101	55	70	17	- -	- -	- -	- -
	51,402	44,303	50,679	57,677	63,329	$53,504	- -	- -	- -	- -
45 - 49	480	149	101	68	82	58	21	- -	1	- -
	53,219	46,061	48,422	58,921	60,862	59,842	$62,674	- -		- -
50 - 54	568	153	122	62	83	66	70	12	- -	- -
	56,776	46,459	50,210	55,067	67,131	66,720	70,868	$55,375	- -	- -
55 - 59	517	93	119	54	75	72	72	28	4	- -
	53,994	45,852	48,116	54,853	61,049	54,820	62,921	60,857		- -
60 - 64	307	46	72	35	62	44	25	16	4	3
	56,543	46,872	47,750	53,827	61,721	62,112	66,035	77,826		
65 - 69	142	14	32	18	20	22	14	10	7	5
	56,655	42,432	45,884	57,603	59,243	65,580	45,789	65,758	66,289	111,109
70 & over	51	7	6	6	8	5	5	1	4	9
	57,068	41,305	47,610	45,144	66,332	77,911	83,157			54,080
Total	3,657	1,443	843	348	428	284	207	67	20	17
	$51,688	$44,207	$49,132	$56,302	$62,509	$60,902	$65,290	$64,416	$55,656	$72,086

[1]Compensation is annualized for those hired during the prior plan year.

Exhibit C: Reconciliation of Participant Data

	Active Participants	Inactive Vested Participants[1]	Disableds	Retired Participants[2]	Beneficiaries	Total
Number as of July 1, 2021	**3,757**	**160**	**208**	**2,921**	**841**	**7,887**
New participants[3]	479	N/A	N/A	N/A	N/A	479
Terminations – with vested rights	-94	94	0	0	0	0
Terminations – without vested rights	-218	N/A	N/A	N/A	N/A	-218
Retirements	-118	-6	N/A	124	N/A	0
New disabilities	-5	0	5	N/A	N/A	0
Return to work	4	-4	0	0	N/A	0
Deceased	-10	-2	-8	-112	-35	-167
New beneficiaries	0	0	0	0	63	63
Lump sum cash-outs	-128	-11	0	0	0	-139
Rehire	0	0	N/A	0	N/A	0
Certain period expired	N/A	N/A	0	0	-2	-2
Data adjustments[4]	-10	3	0	1	0	-6
Exclusion of suspended participants	0	0	-1	-11	-2	-14
Number as of July 1, 2022	**3,657**	**234**	**204**	**2,923**	**865**	**7,883**

[1]Excludes terminated participants with contributions remaining in the plan.
[2]Includes 10 suspended retirees as of July 1, 2021..
[3]23 of the 479 new active participants are rehired participants; two of the remaining 456 new participants were included in the data for the first time this year have over one year of service.
[4]The following data adjustments were made per the TPA:
Ten active participants were deemed non-participants;
One inactive vested participant was deemed non-vested and four previously terminated participants were included as inactive vested participants with this valuation;
One healthy retiree was included for the first time with this valuation.

Exhibit D: Summary Statement of Income and Expenses on a Market Value Basis

	Year Ended June 30, 2022		Year Ended June 30, 2021	
Net assets at market value at the beginning of the year		$1,672,138,000		$1,317,795,000
Contribution and other income:				
Employer contributions	$51,750,000		$48,764,000	
Employee contributions	18,552,000		19,133,000	
Total contribution income		*$70,302,000*		*$67,897,000*
Other income		$100,000		$55,000
Investment income:				
Investment income	-$195,565,000		$423,570,000	
Less investment fees	-4,052,000		-3,727,000	
Net investment income		*-$199,617,000*		*$419,843,000*
Total income available for benefits		**-$129,215,000**		**$487,795,000**
Less benefit payments and administrative expenses:				
Administrative expenses	-$1,838,000		-$2,091,000	
Pension payments	-137,137,000		-131,361,000	
Net benefit payments and administrative expenses		*-$138,975,000*		*-$133,452,000*
Change in reserve for future benefits		**-$268,190,000**		**$354,343,000**
Net assets at market value at the end of the year		**$1,403,948,000**		**$1,672,138,000**

Exhibit E: Asset Allocation as of June 30, 2022

		General Employees	School Board	Total
1.	**Market value of assets as of July 1, 2021**	**$1,672,138,000**	**$237,561,000**	**$1,909,699,000**
2.	Employer contributions	$51,750,000	$60,200,000	$111,950,000
3.	Employee contributions	18,552,000	1,919,000	20,471,000
4.	Other income not in yields	100,000	1,000	101,000
5.	Total contributions and other income: (2) + (3) + (4)	$70,402,000	$62,120,000	$132,522,000
6.	Benefit payments and refunds	-$137,137,000	-$47,039,000	-$184,176,000
7.	Administrative expenses	-1,838,000	-489,000	-2,327,000
8.	Total benefit payments and expenses: (6) + (7)	-$138,975,000	-$47,528,000	-$186,503,000
9.	Net cash flow: (5) + (8)	-$68,573,000	$14,592,000	-$53,981,000
10.	Net investment return	-199,617,000	-21,869,000	-221,486,000
11.	**Market value of assets as of July 1, 2022: (1) + (9) + (10)**	**$1,403,948,000**	**$230,284,000**	**$1,634,232,000**

Exhibit F: Development of the Fund through June 30, 2022

Year Ended June 30	Employer Contributions	Employee Contributions	Net Investment Return[1]	Admin. Expenses	Benefit Payments	Market Value of Assets at Year-End	Actuarial Value of Assets at Year-End	Actuarial Value as a Percent of Market Value
2013	$38,694,000	$17,322,000	$145,776,000	$0	$104,849,000	$1,014,429,000	$954,964,648	94.14%
2014	42,145,000	17,366,000	179,568,000	0	108,175,000	1,145,333,000	1,016,486,156	88.75%
2015	48,015,000	16,975,000	55,130,000	0	111,738,000	1,153,715,000	1,084,009,929	93.96%
2016	54,236,000	19,173,000	11,293,000[2]	0	115,631,000	1,122,786,000	1,146,863,597	102.14%
2017	53,817,000	18,243,000	151,110,000	0	116,536,000	1,229,420,000	1,212,852,870	98.65%
2018	51,903,000	20,671,000	121,682,000[3]	1,806,000	120,993,000	1,300,987,000[4]	1,269,985,380	97.62%
2019	47,220,000	35,639,000	77,334,000	832,000	126,491,000	1,333,862,000[5]	1,314,030,198	98.51%
2020	48,219,000	19,599,000	47,653,000	1,252,000	130,553,000	1,317,795,000[6]	1,336,954,199	101.45%
2021	48,764,000	19,133,000	419,843,000	2,091,000	131,361,000	1,672,138,000[7]	1,435,548,631	85.85%
2022	51,750,000	18,552,000	-199,617,000	1,838,000	137,137,000	1,403,948,000[8]	1,479,199,416	105.36%

[1]On a market basis, net of investment fees (and administrative expenses prior to 2018)
[2]Includes $5,706,000 asset adjustment
[3]Includes $155,000 asset adjustment
[4]Includes an additional $110,000 in other income not in yields
[5]Includes an additional $5,000 in other income not in yields
[6]Includes an additional $267,000 in other income not in yields
[7]Includes an additional $55,000 in other income not in yields
[8]Includes an additional $100,000 in other income not in yields

Section 4: Actuarial Valuation Basis

Exhibit I: Actuarial Assumptions, Methods and Models

Rationale for Assumptions:

The information and analysis used in selecting methods and each economic and mortality assumption that has a significant effect on this actuarial valuation is shown in in the Review of Actuarial Experience for the five-year period ended June 30, 2019 dated March 17, 2021. The information used in selecting each other demographic assumption that has a significant effect on this valuation is shown in the Review of Actuarial Experience for the five-year period ended June 30, 2019 dated April 20, 2022.

Net Investment Return:

7.00%; the investment return rate is assumed to be net of investment expenses

The net investment return assumption was chosen by the Pension Fund's Board of Trustees, with input from the actuary. This assumption is a long-term estimate derived from historical data, current and recent market expectations, and professional judgment. As part of the analysis, a building block approach was used that reflects inflation expectations and anticipated risk premiums for each of the portfolio's asset classes as provided by Marquette and Segal Marco Advisors, as well as the Fund's target asset allocation.

Administrative Expenses:

$1,200,000 per year beginning in 2017, projected annually with 2.25% inflation. As of July 1, 2022, the assumed annual expense is $1,351,213 and includes a $10,000 adjustment for a one-time expense.

Salary Increases:

Age	Rate (%)
Under 25	10.00
25 - 29	8.50
30 - 34	7.50
35 - 39	6.50
40 - 44	5.75
45 - 49	5.00
50 - 54	4.25
55 - 59	3.75
60 - 64	3.25
65 & over	3.00

Salary increases include an assumed inflation rate of 2.25% and 0.75% productivity.

Section 4: Actuarial Valuation Basis

Vacation Pay Adjustment:	
Hired prior to September 1, 2011	Retirement benefits are increased by 4.50% to reflect vacation pay
Hired after August 31, 2011	Retirement benefits are increased by 1.50% to reflect vacation pay
Sick Leave Pay Adjustment:	
Hired prior to September 1, 2011	Retirement benefits are increased by 0.50%
Hired after August 31, 2011	No adjustment
Payroll Growth:	3.00%, used to amortize the unfunded actuarial accrued liability as a level percentage of payroll.
Cost-of-Living Adjustments:	
Hired prior to September 1, 2011	2.25%, compounded annually after retirement
Hired after August 31, 2011	1.00%, compounded annually after retirement
Mortality Rates:	
Pre-retirement:	Sex-distinct Pri-2012 Blue Collar Employee Amount-weighted Mortality Table with rates increased by 15%, projected generationally with scale MP-2020
Healthy annuitants and beneficiaries of living retirees:	Sex-distinct Pri-2012 Blue Collar Healthy Retiree Amount-weighted Mortality Table with rates increased by 15%, projected generationally with scale MP-2020
Disabled annuitants:	Sex-distinct Pri-2012 Disabled Retiree Amount-weighted Mortality Table with rates increased by 15%, projected generationally with scale MP-2020
Contingent survivors:	Sex-distinct Pri-2012 Blue Collar Healthy Contingent Survivor Amount-weighted Mortality Table with rates increased by 15%, projected generationally with scale MP-2020
	The underlying tables with the generational projection to the ages of participants as of the measurement date reasonably reflect the mortality experience of the Fund as of the measurement date. These mortality tables were then adjusted to future years using the generational projection to reflect future mortality improvement between the measurement date and those years.

Section 4: Actuarial Valuation Basis

Annuitant Mortality Rates:

	Rate (%)[1]					
	Healthy		Disabled		Contingent Survivor	
Age	Male	Female	Male	Female	Male	Female
55	0.74	0.56	2.50	1.69	1.94	0.95
60	1.07	0.81	2.71	1.97	2.36	1.26
65	1.46	1.24	3.29	2.45	2.98	1.76
70	2.36	1.88	4.53	3.26	3.93	2.51
75	3.83	3.01	6.68	4.64	5.42	3.68
80	6.57	5.00	10.26	7.07	7.80	5.55
85	11.25	8.61	15.77	11.35	11.73	8.83
90	19.02	15.00	23.60	18.53	18.77	15.00

[1]Rates shown do not include generational projection.

Mortality and Disability Rates Before Retirement:

	Rate (%)			
	Mortality[1]		Disability	
Age	Male	Female	Male	Female
20	0.08	0.02	0.00	0.00
25	0.07	0.03	0.00	0.00
30	0.07	0.03	0.00	0.00
35	0.08	0.04	0.07	0.07
40	0.10	0.07	0.10	0.10
45	0.13	0.10	0.15	0.15
50	0.20	0.15	0.26	0.23
55	0.32	0.23	0.45	0.38
60	0.51	0.35	0.68	0.47

[1]Rates shown do not include generational projection.

Section 4: Actuarial Valuation Basis

Termination Rates Before Retirement (Amount-Weighted):

Years of Service	Rate (%)[3]
Less than 1	11.00
1	10.50
2	10.00
3	9.00
4	7.00
5	6.50
6	6.00
7	5.50
8	5.00
9	4.50
10	4.00
11	3.50
12	3.00
13	2.50
14	2.00
15 or more	1.50

[3]Withdrawal rates do not apply at or beyond the later of eligibility for early retirement or age 55.

Retirement Rates:

Less than 30 Years of Service		30 or More Years of Service	
Age	**Rate**	**Age**	**Rate**
50-52	2%	50-53	60%
53-54	3	54-57	45
55	5	58-59	40
56-57	6	60-61	35
58-59	7	62-69	20
60	20	70	100
61	15		
62-64	10		
65-67	20		
68	15		
69	25		
70	100		

Section 4: Actuarial Valuation Basis

Weighted Average Retirement Age:	Age 61.9, determined as follows: The weighted average retirement age for each participant is calculated as the sum of the product of each potential current or future retirement age times the probability of surviving from current age to that age and then retiring at that age, assuming no other decrements. The overall weighted retirement age is the average of the individual retirement ages based on all the active participants included in the July 1, 2022 actuarial valuation.
Retirement Rates for Inactive Vested Participants:	Age 60 or current age, if later
Additional Accumulated Unused Sick Leave at Retirement:	
Hired prior to September 1, 2011	Additional 0.25 years if service included in total service (prior to application of maximum)
Hired after August 31, 2011	No adjustment
Unknown Data for Participants:	There were no records that were missing both service amounts and dates of hire. For participants with less than one year of benefit service, salaries were annualized.
Percent Married:	
Hired prior to September 1, 2011	Assumption based on active participant contribution rate provided with valuation data.
Hired after August 31, 2011	Assume all participants are not married.
Age of Spouse:	
Male Participants	Assumed to be three years older than their female spouses.
Female Participants	Assumed to be two years younger than their male spouses.
Form of Payment:	Married participants hired prior to September 1, 2011 are assumed to elect a 75% joint and survivor annuity. Unmarried participants hired prior to September 1, 2011 and all participants hired after August 31, 2011 are assumed to elect a life annuity.
Refunds of Employee Contributions for Terminated Vested Participants:	60% of participants hired before September 1, 2011 elect a refund of their employee contribution balances. 100% of participants hired after August 31, 2011 elect a refund of their employee contribution balances.
Actuarial Value of Assets:	Market value of assets less unrecognized returns in each of the last five years. Unrecognized return is equal to the difference between the actual market return and the expected return on the actuarial value, and is recognized over a five-year period, further adjusted, if necessary, to be within 20% of the market value.
Actuarial Cost Method:	Entry Age Actuarial Cost Method. Entry Age is current age minus years of service. Normal Cost and Actuarial Accrued Liability are calculated on an individual basis and are allocated by salary.
Justification for Change in Actuarial Assumptions:	The beginning-of-year administrative expense was increased by an additional $10,000 to account for a one-time expense.

Exhibit II: Summary of Plan Provisions

This exhibit summarizes the major provisions of the Plan included in the valuation. It is not intended to be, nor should it be interpreted as, a complete statement of all plan provisions.

Plan Year:	July 1 through June 30
Plan Status:	Ongoing
Normal Pension:	
Eligibility:	A participant may retire at:
Hired before July 1, 2010	• (a) age 60 after completing 10 years of service, or (b) age 65 after completing 5 years of service, or (c) any age after completing 30 years of service.
Hired between July 1, 2010 and August 31, 2011	• (a) age 60 after completing 15 years of service, or (b) age 60 after completing 5 years of service (vested percentage applies), or (c) any age after completing 30 years of service.
Hired after August 31, 2011	• (a) age 62 after completing 15 years of service, or (b) age 62 after completing 5 years of service (vested percentage applies), or (c) any age after completing 30 years of service.
Monthly Amount:	
Hired before July 1, 2010	• 2.5% of average monthly salary for each year of service.
Hired between July 1, 2010 and August 31, 2011	• 2.0% of average monthly salary for each year of service.
Hired after August 31, 2011	• 1.0% of average monthly salary for each year of service. This amount cannot be less than $12 per month for each year of service, capped at 80% of average monthly salary.
	Participants hired before September 1, 2011 had a one-time option to elect to have benefits earned for service after October 31, 2011 use the same 1% accrual rate, average monthly salary, and COLA as participants hired after August 31, 2011. Benefits for service earned prior to November 1, 2011 follow the plan provisions in their predecessor plan. The participants who made this election are referred to as Hybrid Participants.

Section 4: Actuarial Valuation Basis

Normal Pension, continued:	
Average Monthly Salary:	
Hired before September 1, 2011	• Average of the highest consecutive 36 months of salary
Hired after August 31, 2011	• Average of the highest consecutive 120 months of salary
Normal Form of Payment:	
Hired prior to September 1, 2011	• 75% Joint-and-Survivor (no reduction in benefit for providing survivor coverage)
Hired after August 31, 2011	• Single life annuity
Early Retirement:	
Service Requirement	
Hired before July 1, 2010	• 10 years of service or Age 60 with five years
Hired between July 1, 2010 and August 31, 2011	• 15 years of service or Age 60 with five years
Hired after August 31, 2011	• Age 52 and 15 years of service or Age 62 and 5 years of service For Hybrid Participants, early retirement eligibility and reductions under their predecessor plan apply to their entire benefit.
Monthly Amount *Hired before September 1, 2011*	• Normal pension monthly amount reduced by ½ of 1% per month for the first 60 months and by ¼ of 1% per month for the remaining months by which age at retirement is less than 60. More favorable early retirement adjustments may apply to participants in prior plans.
Hired after August 31, 2011	• Normal pension monthly amount reduced by ½ of 1% per month before age 62.

Section 4: Actuarial Valuation Basis

Disability:	
Service Requirement	• 5 years of service for non-job-related disability. None for job related disability.
Monthly Amount Payable until Normal Retirement	
Hired before September 1, 2011	• Greater of 50% of highest consecutive 36 months of salary at disability *and* benefit calculated as 2.50% times service accrued times average of the highest consecutive 36 months of salary at disability; benefit payable immediately
Hired after August 31, 2011	• Greater of 50% of highest consecutive 36 months of salary at disability *and* benefit calculated as 2.00% times service accrued times average of the highest consecutive 36 months of salary at disability; benefit payable immediately
Recalculated Monthly Amount Payable at Normal Retirement for Surviving Disabled Participants	
Hired before July 1, 2010	• 2.50% times service (accrued at disability plus imputed through Normal Retirement) times average of the highest consecutive 36 months of salary; benefit payable at age 60
Hired between July 1, 2010 and August 31, 2011	• 2.00% times service (accrued at disability plus imputed through Normal Retirement) times average of the highest consecutive 36 months of salary; benefit payable at age 60
Hired after August 31, 2011	• 1.00% times service (accrued at disability plus imputed through Normal Retirement) times average of the highest consecutive 120 months of salary times vested percentage; benefit payable at age 62
All participants	• Benefit amount at Normal Retirement can be less than what participant was receiving during period of disability. Benefit amount at Normal Retirement cannot exceed 80% of final average salary.

Section 4: Actuarial Valuation Basis

Vesting:

- An employee who terminates employment may receive a percentage of the accrued benefit payable at normal retirement as determined below:

Completed Years of Service	Percentage Vested[1] Hired before July 1, 2010	Hired after June 30, 2010
Less than 5	0%	0%
5	25	25
6	30	30
7	35	35
8	40	40
9	45	45
10	100	50
11	100	55
12	100	60
13	100	65
14	100	70
15 or more	100	100

[1]A participant is always 100% vested in their contributions to the Fund.

Hybrid Participants are subject to the vesting schedule in their predecessor plan.

Termination:

- A participant terminating employment may elect a refund of their own contributions with interest or leave contributions in the fund and receive a monthly benefit to commence at normal retirement date equal to the accrued benefit as of the date of termination. A refund will cause the forfeiture of any other vested accrued benefit from the Fund.

Pre-retirement Death Benefits:

Hired before September 1, 2011

- 75% of 2.50% times service accrued times vested percentage times average of the highest consecutive 36 months of salary at death

Hired after August 31, 2011

- 75% of 2.00% times service accrued times vested percentage times average of the highest consecutive 36 months of salary at death

All Participants

- Benefit prior to application of 75% cannot exceed 80% of final average salary.
- Eligible beneficiaries are the spouse or children under age 23 (18 of not in post-secondary school).
- Beneficiaries can elect to receive a refund of employee contributions in lieu of an annuity benefit.

Section 4: Actuarial Valuation Basis

Death Benefits after Retirement Eligibility:

- If an active participant who is eligible to retire, or a disabled or retired participant dies, 75% of the accrued pension benefit is payable to the beneficiary. Eligible beneficiaries are the spouse or unmarried children under 23 (18 if not in post-secondary school).

Credited Service:

- Service is credited for employment as a general employee of the City of Atlanta. Additional credit is granted for accumulated sick leave if hired prior to September 1, 2011 and for other prior service as specified in the plan.

Participation:

- All employees of the City of Atlanta, excluding temporary employees, firefighters, police officers, and employees hired after 2001 in job grades 19 and above. Also includes employees hired between 2001 and 2005 in any job grade who elected to transfer from the Defined Contribution plan to this Fund and who agreed to roll over their DC plan balances to this Fund and pay additional contributions as if they had been participants in this Fund from date of hire.

Employee Contributions:

	% of Base Salary	
Employee	**Participants Hired before September 1, 2011[1]**	**Hybrid Participants and Participants Hired after August 31, 2011[1]**
Unmarried employees without beneficiaries	12%	8%
Unmarried employees with beneficiaries	13%	8%
Married employees	13%	8%

[1]Excludes employees hired prior to January 1, 1984.

Interest on Employee Contributions:

- Employee contributions earn 5% interest each year.

Cost of Living Provision:

Benefits for retirees and beneficiaries are adjusted annually on January 1 of each year based on the change in the Consumer Price Index from November 1 through October 31 of the preceding year.

Hired before September 1, 2011

- Such annual adjustment cannot exceed 3%; also applied to Hybrid Participants' benefits for service prior to November 1, 2011.

Hired after August 31, 2011

- Such annual adjustment cannot exceed 1%; also applied to Hybrid Participants' benefits for service after October 31, 2011.

Changes in Plan Provisions:

There have been no changes in plan provisions since the last valuation.

Appendix A: Definition of Pension Terms

The following list defines certain technical terms for the convenience of the reader:

Actuarial Accrued Liability for Actives:	The equivalent of the accumulated normal costs allocated to the years before the valuation date.
Actuarial Accrued Liability for Retirees and Beneficiaries:	Actuarial Present Value of lifetime benefits to existing retirees and beneficiaries. This sum takes account of life expectancies appropriate to the ages of the annuitants and the interest that the sum is expected to earn before it is entirely paid out in benefits.
Actuarial Cost Method:	A procedure allocating the Actuarial Present Value of Future Benefits to various time periods; a method used to determine the Normal Cost and the Actuarial Accrued Liability that are used to determine the actuarially determined contribution.
Actuarial Gain or Loss:	A measure of the difference between actual experience and that expected based upon a set of Actuarial Assumptions, during the period between two Actuarial Valuation dates. To the extent that actual experience differs from that assumed, Actuarial Accrued Liabilities emerge which may be the same as forecasted or may be larger or smaller than projected. Actuarial gains are due to favorable experience, e.g., assets earn more than projected, salary increases are less than assumed, members retire later than assumed, etc. Favorable experience means actual results produce actuarial liabilities not as large as projected by the actuarial assumptions. On the other hand, actuarial losses are the result of unfavorable experience, i.e., actual results yield actuarial liabilities that are larger than projected.
Actuarially Equivalent:	Of equal Actuarial Present Value, determined as of a given date and based on a given set of Actuarial Assumptions.
Actuarial Present Value (APV):	The value of an amount or series of amounts payable or receivable at various times, determined as of a given date by the application of a particular set of Actuarial Assumptions. Each such amount or series of amounts is: Adjusted for the probable financial effect of certain intervening events (such as changes in compensation levels, marital status, etc.) Multiplied by the probability of the occurrence of an event (such as survival, death, disability, withdrawal, etc.) on which the payment is conditioned, and Discounted according to an assumed rate (or rates) of return to reflect the time value of money.

Appendix A: Definition of Pension Terms

Actuarial Present Value of Future Benefits:	The Actuarial Present Value of benefit amounts expected to be paid at various future times under a particular set of Actuarial Assumptions, taking into account such items as the effect of advancement in age, anticipated future compensation, and future service credits. The Actuarial Present Value of Future Benefits includes the liabilities for active members, retired members, beneficiaries receiving benefits, and inactive members entitled to either a refund of member contributions or a future retirement benefit. Expressed another way, it is the value that would have to be invested on the valuation date so that the amount invested plus investment earnings would provide sufficient assets to pay all projected benefits and expenses when due.
Actuarial Valuation:	The determination, as of a valuation date, of the Normal Cost, Actuarial Accrued Liability, Actuarial Value of Assets, and related Actuarial Present Values for a plan, as well as Actuarially Determined Contributions.
Actuarial Value of Assets (AVA):	The value of the Plan's assets as of a given date, used by the actuary for valuation purposes. This may be the market or fair value of plan assets, but commonly plans use a smoothed value in order to reduce the year-to-year volatility of calculated results, such as the funded ratio and the Actuarially Determined Contribution.
Actuarially Determined:	Values that have been determined utilizing the principles of actuarial science. An actuarially determined value is derived by application of the appropriate actuarial assumptions to specified values determined by provisions of the Plan.
Actuarially Determined Contribution (ADC):	The employer's contributions, expressed as a dollar amount or a percentage of covered plan compensation, determined under the Plan's funding policy. The ADC consists of the Employer Normal Cost and the Amortization Payment.
Amortization Method:	A method for determining the Amortization Payment. The most common methods used are level dollar and level percentage of payroll. Under the Level Dollar method, the Amortization Payment is one of a stream of payments, all equal, whose Actuarial Present Value is equal to the Unfunded Actuarial Accrued Liability. Under the Level Percentage of Pay method, the Amortization Payment is one of a stream of increasing payments, whose Actuarial Present Value is equal to the Unfunded Actuarial Accrued Liability. Under the Level Percentage of Pay method, the stream of payments increases at the assumed rate at which total covered payroll of all active members will increase.
Amortization Payment:	The portion of the pension plan contribution, or ADC, that is intended to pay off the Unfunded Actuarial Accrued Liability.

Appendix A: Definition of Pension Terms

Assumptions or Actuarial Assumptions:	The estimates upon which the cost of the Plan is calculated, including: Investment return - the rate of investment yield that the Plan will earn over the long-term future; Mortality rates - the rate or probability of death at a given age for employees and retirees; Retirement rates - the rate or probability of retirement at a given age or service; Disability rates - the rate or probability of disability retirement at a given age; Withdrawal rates - the rate or probability at which employees of various ages are expected to leave employment for reasons other than death, disability, or retirement; Salary increase rates - the rates of salary increase due to inflation, real wage growth and merit and promotion increases.
Closed Amortization Period:	A specific number of years that is counted down by one each year, and therefore declines to zero with the passage of time. For example, if the amortization period is initially set at 20 years, it is 19 years at the end of one year, 18 years at the end of two years, etc. See Open Amortization Period.
Decrements:	Those causes/events due to which a member's status (active-inactive-retiree-beneficiary) changes, that is: death, retirement, disability, or withdrawal.
Defined Benefit Plan:	A retirement plan in which benefits are defined by a formula based on the member's compensation, age and/or years of service.
Defined Contribution Plan:	A retirement plan, such as a 401(k) plan, a 403(b) plan, or a 457 plan, in which the contributions to the plan are assigned to an account for each member, the plan's earnings are allocated to each account, and each member's benefits are a direct function of the account balance.
Employer Normal Cost:	The portion of the Normal Cost to be paid by the employer. This is equal to the Normal Cost less expected member contributions.
Experience Study:	A periodic review and analysis of the actual experience of the Plan that may lead to a revision of one or more actuarial assumptions. Actual rates of decrement and salary increases are compared to the actuarially assumed values and modified based on recommendations from the Actuary.
Funded Ratio:	The ratio of the Actuarial Value of Assets (AVA) to the Actuarial Accrued Liability (AAL). Plans sometimes also calculate a market funded ratio, using the Market Value of Assets (MVA), rather than the AVA.
GASB 67 and GASB 68:	Governmental Accounting Standards Board (GASB) Statements No. 67 and No. 68. These are the governmental accounting standards that set the accounting rules for public retirement systems and the employers that sponsor or contribute to them. Statement No. 68 sets the accounting rules for the employers that sponsor or contribute to public retirement systems, while Statement No. 67 sets the rules for the systems themselves.

Appendix A: Definition of Pension Terms

Investment Return:	The rate of earnings of the Plan from its investments, including interest, dividends and capital gain and loss adjustments, computed as a percentage of the average value of the fund. For actuarial purposes, the investment return often reflects a smoothing of the capital gains and losses to avoid significant swings in the value of assets from one year to the next.
Net Pension Liability (NPL):	The Net Pension Liability is equal to the Total Pension Liability minus the Plan Fiduciary Net Position.
Normal Cost:	The portion of the Actuarial Present Value of Future Benefits and expenses, if applicable, allocated to a valuation year by the Actuarial Cost Method. Any payment with respect to an Unfunded Actuarial Accrued Liability is not part of the Normal Cost (see Amortization Payment). For pension plan benefits that are provided in part by employee contributions, Normal Cost refers to the total of member contributions and employer Normal Cost unless otherwise specifically stated.
Open Amortization Period:	An open amortization period is one which is used to determine the Amortization Payment but which does not change over time. If the initial period is set as 30 years, the same 30-year period is used in each future year in determining the Amortization Period.
Plan Fiduciary Net Position:	Market value of assets.
Service Costs:	The portions of the actuarial present value of projected benefit payments that are attributed to valuation years.
Total Pension Liability (TPL):	The actuarial accrued liability under the entry age normal cost method and based on the blended discount rate as described in GASB 67 and 68.
Unfunded Actuarial Accrued Liability:	The excess of the Actuarial Accrued Liability over the Actuarial Value of Assets. This value may be negative, in which case it may be expressed as a negative Unfunded Actuarial Accrued Liability, also called the Funding Surplus or an Overfunded Actuarial Accrued Liability.
Valuation Date or Actuarial Valuation Date:	The date as of which the value of assets is determined and as of which the Actuarial Present Value of Future Benefits is determined. The expected benefits to be paid in the future are discounted to this date.